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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,379	01/10/2007	Markus Schwab	14609-0040	8278
7590 Thomas D MacBlain Gallagher & Kennedy 2575 East Camelback Road Phoenix, AZ 85016-9225		12/14/2007	EXAMINER HOFFBERG, ROBERT JOSEPH	
			ART UNIT 2835	PAPER NUMBER
			MAIL DATE 12/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,379	Applicant(s) SCHWAB, MARKUS	
	Examiner Robert J. Hoffberg	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-18 and 20-23 is/are rejected.
- 7) ☒ Claim(s) 7 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/11/06</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 2, 8, 10-13, 15 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Nelik (US 6,069,792).

With respect to Claim 1, Nelik teaches an electric device, including a casing (housing of 12, 14, 16), an electric circuit (Fig. 1, on 12) with a heat generating component and at least one fan (18), the heat generating component being in thermal contact with a wall portion of the casing (see Fig. 1), the casing including a double wall portion with an inner wall portion (14 right wall) and an outer wall (14 left wall) portion defining an air duct (27) between the inner wall portion and the outer wall portion, said heat generating component being in thermal contact with the inner wall portion (see Fig. 1), said double wall portion being a heat sink (14) and said at least one fan being arranged such that an air flow produced by said at least one fan is directed through said air duct (see Fig. 1).

With respect to Claim 12, Nelik teaches a casing for an electrical device of the kind including an electric circuit (Fig. 1, on 12) with a heat generating component and at least one fan (18), the casing characterized in that the casing includes a double wall portion with an inner wall portion (14 right wall) and an outer wall portion (14 left wall)

defining an air duct (27) between the inner wall portion and the outer wall portion and being built such that said heat generating component is in thermal contact with the inner wall portion when the electric circuit is in place (see Fig. 1) and that an air flow produced by said at least one fan is directed through said air duct (see Fig. 1), said double wall portion being a heat sink of the electrical device (14).

With respect to Claims 2, 8, 10-11, 13, 15 and 20-23, Nelik further teaches said casing is made of a metal (Col. 5, line 9) with a high coefficient of thermal conductivity aluminum (claims 2, 13, 15 and 23), in that an additional heat sink (22) is mounted within the air duct, being in thermal contact with said double wall portion (see Fig. 1) (claims 8 and 20), it includes at least two fans (18,20), the casing including a second double wall portion with an inner wall portion (16 left side) and an outer wall portion (16 right side) defining a second air duct (27), said second double wall portion being a second heat sink (16) and said at least two fans being arranged such that an air flow produced by said at least two fans is directed through said air ducts respectively (see Fig. 1) (claims 10 and 21) and said casing is substantially a cuboid in shape (see Fig. 1) and has two lateral surfaces (see Fig. 1), each air duct being arranged along one of said lateral surfaces respectively (see Fig. 1) and leading from a front surface of the substantially cuboid casing to a rear surface of the casing (see Fig. 1) (claims 11 and 22).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3-5, 9 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelik (US 6,069,792).

With respect to Claims 3 and 15, Nelik discloses the claimed invention including said casing is substantially a cuboid in shape (see Fig. 1) and includes a bottom (tops of 12,14,16) and a cover (bottoms of 12,14,16) fitted together in thermal contact (thermal contact thru 14), , said circuit being implemented on a printed circuit board (see Fig. 1) and the printed circuit board being mounted on the bottom (see Fig. 1). Nelik fail to disclose that said inner wall portion being a part of said bottom, said outer wall portion being a part of said cover. It would have been an obvious matter of design choice to for the inner wall portion being its own member or part of any other member including apart of said bottom and the outer wall portion being its own member or part of any other member including a part of said cover, since applicant has not disclosed that making the inner and outer wall portions part of the bottom and cover respectively solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the inner and outer wall portions being their own members. (Examiner note: the claimed invention needs to structural distinguishable from the prior art. MPEP 2114).

With respect to Claims 4 and 16, Nelik discloses the claimed invention including thermal pad (25) between contacting parts of the bottom and the cover. Nelik fails to disclose a thermal paste and fasteners. Official Notice is taken that a thermal paste and

fasteners all well known in the art. It would be obvious to one skilled in the art at the time of the invention to modify the electronic device of Nelik with a thermal paste between heat conducting members for increased heat dissipation of the electric circuit and fasteners as a mechanical means for attaching members of the electronic device together.

With respect to Claims 5-6 and 17-18, Nelik further teaches said bottom includes a base plate (12 top inside of PCB) and a bottom side plate (14 right side) and in that said cover includes a top plate (12 bottom) and a cover side plate (14 left side), said bottom side plate forming said inner wall portion (14 right side), said cover side plate forming said outer wall portion (14 left side) and said printed circuit board being mounted substantially parallel to said base plate (see Fig. 1) (claim 5), said cover side plate forms a lateral surface of said substantially cuboid casing (see Fig. 1), said air duct leading from a front surface to a rear surface of said casing (see Fig. 1) (claim 6).

With respect to Claim 9, Nelik fails to disclose a power semiconductor. It would have been an obvious matter of design choice to the heat generating component to be any heat generating component including a power semiconductor, since applicant has not disclosed that the power semiconductor solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any heat generating component that requires heat dissipation.

Allowable Subject Matter

5. Claims 7 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 7 and 19 are allowable over the art of record because the prior art does not teach or suggest that "said air duct has an inlet, said inlet being formed by an end portion of said bottom side plate that is bent to an inner side of the casing to increase the air flow through said air duct, said at least one fan being arranged on the front surface of said substantially cuboid casing covering said inlet at least partially." The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render said claims 7 and 19 patentable over art of record.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cheng (US 6,081,425) and Chang (US 6,735,080) disclose a casing, an electric circuit with a heat generating component and at least one fan, the heat generating component being in thermal contact with a wall portion of the casing, the casing including a double wall portion with an inner wall portion and an outer wall portion defining an air duct between the inner wall portion and the outer wall portion, said heat generating component being in thermal contact with the inner wall portion, said double wall portion being a heat sink and said at least one fan being arranged such that an air flow produced by said at least one fan is directed through said air duct. Komatsu (US 6,175,494) disclose a casing, a heat generating component, the casing

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having an air duct being a heat sink. Iwasaki (US 6,381,134) disclose a casing with a double wall, wherein the double wall forms an air duct

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash Gandhi can be reached on (571) 272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJH 12/7/07 *RJA*

J. Gandhi
12/10/07

JAYPRAKASH GANDHI
SUPERVISORY PATENT EXAMINER